Gunter, Jason

From: Nations, Mark <mnations@doerun.com>
Sent: Wednesday, March 12, 2014 8:45 AM
To: Gunter, Jason
Cc: Yingling, Mark; Wohl, Matthew; robert.hinkson@dnr.mo.gov; brandon.wiles@dnr.mo.gov; Ty Morris (TMorris@barr.com); Cummings, Mark; Sanders, Amy B.
Subject: Rivermines Progress Report
Attachments: RM_02-14.doc; 2014-02-25 RM NPDES Pace Lab Report.pdf

Jason, attached is the February report.
Mark

THE DOE RUN COMPANY

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

March 11, 2014

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: The Doe Run Company – Elvins/Rivermines Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 56 of the Unilateral Administrative Order (UAO) (CERCLA-07-2005-0169) for the referenced project and on behalf of The Doe Run Company, the progress report for the period February 1, 2014 through February 28, 2014 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,

Mark Nations
Mining Properties Manager

Enclosures
c: Mark Yingling – TDRC (electronic only)
Matt Wohl – TDRC (electronic only)
Robert Hinkson – MDNR
Brandon Wiles – MDNR
Ty Morris – Barr Engineering

Elvins/Rivermines Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: February 1, 2014 – February 28, 2014

1. **Actions Performed and Problems Encountered This Period:**
   a. During the period, flow from the seepage pond was directed through the roughing filter, the iron filter, and then into the round tank, where it discharged directly into the effluent channel.
   b. No overflows of the roughing filter were observed during the period. Flow through the system remained under one gallon per minute during the entire duration of the period.
   c. Continued collecting analytical samples from the pilot test two to three times per week. Samples were taken from the seepage pond (system influent) and the ZVI filter effluent (RMP-Polish). Samples of the roughing filter effluent (RMP-Rough) were not taken due to frozen conditions and low water surface elevations.
   d. Continued to take analytical samples from the seep pond effluent and the western treatment pond effluent to monitor the metals reduction of the treatment pond.
   e. Flow through the seepage ponds was measured at 172 gallons per minute on January 15, 2014.
   f. Flow to the east treatment cell remained off throughout this period.

2. **Analytical Data and Results Received This Period:**
   a. Dissolved zinc concentrations in the polishing filter effluent ranged between 9.91 mg/L and 14.15 mg/L.
   b. Total zinc concentrations in the polishing filter effluent ranged between 10.20 mg/L and 12.01 mg/L.
   c. Total iron concentrations in the polishing filter effluent ranged between 0.003 mg/L and 0.197 mg/L.
   d. Total suspended solids concentrations in the polishing filter were non-detect in all samples.
   e. During this period, water samples were collected from just upstream of Old Missouri Highway 32, as well as from upstream and downstream of the confluence of the site discharge with Flat River. The analytical results for this event are included with this progress report.
   f. During this period, the Ambient Air Monitoring Reports for October 2013 and November 2013 were completed. Any issues identified in these reports are discussed below. A copy of these documents has been sent to your attention.

      The October 2013 Ambient Air Monitoring Report noted the following:

      - The action levels for lead and dust were not exceeded.
      - No sample was taken on the Big River #4 TSP monitor on 10/04/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
      - There was a QA blank filter for the Rivermines #3 (Water Plant) TSP and PM_{10} monitors on 10/11/13.
      - No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/14/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.
      - No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/15/13 due an electrical issue with the GFCI plug. Upon discovery, this issue was addressed.
      - No sample was taken on the Big River #4 TSP monitor on 10/16/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly.

- No sample was taken on the Rivermines #1 (Office) TSP monitor on 10/18/13 or on 10/21/13 due to unknown reasons. Follow-up inspections of the monitor indicated that the monitor is working properly
- No sample was taken on the Big River #4 TSP monitor on 10/29/13 due to an electrical failure. Upon discovery, this issue was addressed.
- No sample was taken on the Big River #4 TSP monitor on 10/30/13 due to a mechanical failure. Upon discovery, this issue was addressed.
- No sample was taken on the Rivermines #3 (Water Plant) PM_{10} monitor on 10/31/13 due to a mechanical failure. Upon discovery, this issue was addressed.

The November 2013 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No sample was taken on the Rivermines #2 (Wood and Barton) TSP monitor on 11/15/13 due to the run time of the monitor being outside of the acceptable limits. This issue has been addressed.
- There was a QA blank filter for the Big River #4 QA TSP monitor on 11/19/13.
- There was a QA blank filter for the Rivermines #2 (Wood and Barton) PM_{10} monitor on 11/19/13.
- No sample was taken on the Rivermines #3 (Water Plant) PM_{10} monitor on 11/21/13 due to a mechanical failure. Upon discovery, this issue was addressed.
- No samples were taken with the TSP monitors on 11/27/13, 11/28/13, or 11/29/13 due to the holiday.
- No samples were taken with the PM_{10} monitors on 11/30/13 due to the holiday.

3. Developments Anticipated and Work Scheduled for Next Period:

a. Continue analytical sampling and field measurements three times a week.

b. Continue to operate the renovated pilot test.

c. Complete monthly water sampling activities as described in the Removal Action Work Plan.

d. Complete air monitoring activities as described in the Removal Action Work Plan.

e. Continue monitoring the western treatment pond to evaluate the hydraulics and the metals reduction.

f. Continue preliminary work on a long-term surface water management plan including treatment and disposal/discharge options for the seepage from the tailings pile that is currently treated in the biocells.

4. Changes in Personnel:

a. None.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 10, 2014

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Dear Amy Sanders:
Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
9608 Loiret Blvd.
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(913)599-5665

CERTIFICATIONS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60163753001	**RIVERMINES 001**	Water	02/25/14 14:21	02/27/14 08:20
60163753002	**RIVERMINES UPSTREAM**	Water	02/25/14 14:34	02/27/14 08:20
60163753003	**RIVERMINES DOWNSTREAM**	Water	02/25/14 14:07	02/27/14 08:20

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SAMPLE ANALYTE COUNT

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60163753001	**RIVERMINES 001**	EPA 200.7	TJT	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		SM 2540F	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60163753002	**RIVERMINES UPSTREAM**	EPA 200.7	TJT	6	PASI-K
		EPA 200.7	SMW	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60163753003	**RIVERMINES DOWNSTREAM**	EPA 200.7	TJT	6	PASI-K
		EPA 200.7	SMW	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Sample: RIVERMINES 001 **Lab ID: 60163753001** Collected: 02/25/14 14:21 Received: 02/27/14 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	**1.8J**	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 14:50	7440-43-9	
Lead	ND	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 14:50	7439-92-1	
Zinc	**15000**	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 14:50	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**8.0**	mg/L	5.0	5.0	1		03/04/14 07:45		
2540F Total Settleable Solids	Analytical Method: SM 2540F								
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		02/27/14 10:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**823**	mg/L	100	50.0	100		03/09/14 18:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Sample: RIVERMINES UPSTREAM **Lab ID: 60163753002** Collected: 02/25/14 14:34 Received: 02/27/14 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 14:52	7440-43-9	
Calcium	**38400**	ug/L	100	7.8	1	02/27/14 13:15	02/28/14 14:52	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 14:52	7439-92-1	
Magnesium	**23300**	ug/L	50.0	17.0	1	02/27/14 13:15	02/28/14 14:52	7439-95-4	
Total Hardness by 2340B	**192000**	ug/L	500		1	02/27/14 13:15	02/28/14 14:52		
Zinc	ND	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 14:52	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	03/05/14 11:45	03/05/14 17:06	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	03/05/14 11:45	03/05/14 17:06	7439-92-1	
Zinc, Dissolved	**13.0J**	ug/L	50.0	12.5	1	03/05/14 11:45	03/05/14 17:06	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**6.0**	mg/L	5.0	5.0	1		03/04/14 07:45		D6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**30.2**	mg/L	5.0	2.5	5		03/09/14 18:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Sample: RIVERMINES DOWNSTREAM **Lab ID: 60163753003** Collected: 02/25/14 14:07 Received: 02/27/14 08:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	0.56	1	02/27/14 13:15	02/28/14 14:55	7440-43-9	
Calcium	**55100**	ug/L	100	7.8	1	02/27/14 13:15	02/28/14 14:55	7440-70-2	
Lead	ND	ug/L	5.0	2.2	1	02/27/14 13:15	02/28/14 14:55	7439-92-1	
Magnesium	**28100**	ug/L	50.0	17.0	1	02/27/14 13:15	02/28/14 14:55	7439-95-4	
Total Hardness by 2340B	**253000**	ug/L	500		1	02/27/14 13:15	02/28/14 14:55		
Zinc	**890**	ug/L	50.0	12.5	1	02/27/14 13:15	02/28/14 14:55	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	03/05/14 11:45	03/05/14 17:09	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	03/05/14 11:45	03/05/14 17:09	7439-92-1	
Zinc, Dissolved	**704**	ug/L	50.0	12.5	1	03/05/14 11:45	03/05/14 17:09	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**6.0**	mg/L	5.0	5.0	1		03/04/14 07:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**70.5**	mg/L	10.0	5.0	10		03/09/14 19:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(913)599-5665

QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

QC Batch: MPRP/26284 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60163753001, 60163753002, 60163753003

METHOD BLANK: 1336288 Matrix: Water
Associated Lab Samples: 60163753001, 60163753002, 60163753003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	02/28/14 14:35	
Calcium	ug/L	21.6J	100	02/28/14 14:35	
Lead	ug/L	ND	5.0	02/28/14 14:35	
Magnesium	ug/L	ND	50.0	02/28/14 14:35	
Total Hardness by 2340B	ug/L	ND	500	02/28/14 14:35	
Zinc	ug/L	ND	50.0	02/28/14 14:35	

LABORATORY CONTROL SAMPLE: 1336289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	1030	103	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1090	109	85-115	
Magnesium	ug/L	10000	9950	99	85-115	
Total Hardness by 2340B	ug/L		66600			
Zinc	ug/L	1000	1050	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1336290 1336291

Parameter	Units	60163611003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1050	1050	105	105	70-130	0	10	
Calcium	ug/L	317000	10000	10000	331000	330000	141	133	70-130	0	9	M1
Lead	ug/L	ND	1000	1000	1040	1030	103	103	70-130	1	10	
Magnesium	ug/L	108000	10000	10000	120000	119000	121	117	70-130	0	9	
Total Hardness by 2340B	ug/L	1240 mg/L			1320000	1320000				0		
Zinc	ug/L	ND	1000	1000	1010	1010	99	100	70-130	0	11	

MATRIX SPIKE SAMPLE: 1336292

Parameter	Units	60163611004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	ND	1000	1040	104	70-130	
Calcium	ug/L	34200	10000	44200	100	70-130	
Lead	ug/L	ND	1000	1010	101	70-130	
Magnesium	ug/L	145000	10000	158000	123	70-130	
Total Hardness by 2340B	ug/L	684 mg/L		760000			
Zinc	ug/L	ND	1000	1030	101	70-130	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

QC Batch: MPRP/26331
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60163753002, 60163753003

METHOD BLANK: 1338958 Matrix: Water
Associated Lab Samples: 60163753002, 60163753003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	03/05/14 16:59	
Lead, Dissolved	ug/L	ND	5.0	03/05/14 16:59	
Zinc, Dissolved	ug/L	ND	50.0	03/05/14 16:59	

LABORATORY CONTROL SAMPLE: 1338959

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	873	87	85-115	
Lead, Dissolved	ug/L	1000	888	89	85-115	
Zinc, Dissolved	ug/L	1000	872	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1338960 1338961

Parameter	Units	60163755001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	968	907	97	91	70-130	7	10	
Lead, Dissolved	ug/L	ND	1000	1000	948	894	95	89	70-130	6	10	
Zinc, Dissolved	ug/L	144	1000	1000	1070	1010	93	87	70-130	6	11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

QC Batch: WET/46446 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60163753001, 60163753002, 60163753003

METHOD BLANK: 1338179 Matrix: Water
Associated Lab Samples: 60163753001, 60163753002, 60163753003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	03/04/14 07:43	

SAMPLE DUPLICATE: 1338180

Parameter	Units	60163690002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	ND	8.0		10	

SAMPLE DUPLICATE: 1338181

Parameter	Units	60163753002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	5.0	18	10	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

QC Batch: WETA/28500 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60163753001, 60163753002, 60163753003

METHOD BLANK: 1340309 Matrix: Water
Associated Lab Samples: 60163753001, 60163753002, 60163753003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	03/09/14 12:51	

LABORATORY CONTROL SAMPLE: 1340310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1340311 1341125

Parameter	Units	60163799021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	72.2	250	250	306	311	94	96	80-120	2	15	

MATRIX SPIKE SAMPLE: 1341126

Parameter	Units	60163799022 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	ND	250	300	101	80-120	

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QUALIFIERS

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES MONTHLY (RIVERMINES)
Pace Project No.: 60163753

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60163753001	**RIVERMINES 001**	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163753002	**RIVERMINES UPSTREAM**	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163753003	**RIVERMINES DOWNSTREAM**	EPA 200.7	MPRP/26284	EPA 200.7	ICP/20065
60163753002	**RIVERMINES UPSTREAM**	EPA 200.7	MPRP/26331	EPA 200.7	ICP/20094
60163753003	**RIVERMINES DOWNSTREAM**	EPA 200.7	MPRP/26331	EPA 200.7	ICP/20094
60163753001	**RIVERMINES 001**	SM 2540D	WET/46446		
60163753002	**RIVERMINES UPSTREAM**	SM 2540D	WET/46446		
60163753003	**RIVERMINES DOWNSTREAM**	SM 2540D	WET/46446		
60163753001	**RIVERMINES 001**	SM 2540F	WET/46377		
60163753001	**RIVERMINES 001**	EPA 300.0	WETA/28500		
60163753002	**RIVERMINES UPSTREAM**	EPA 300.0	WETA/28500		
60163753003	**RIVERMINES DOWNSTREAM**	EPA 300.0	WETA/28500		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60163753

60163753

Client Name: Doc Run

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7980 3906 3161 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ 2 pic

Thermometer Used: T-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.6

Date and initials of person examining contents: 2/27/14 BA

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. Soil Soil
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☐Yes ☐No ☑N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jason Church 2/27/14

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical™ www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	The Doe Run Company
Address:	PO Box 500
	Viburnum, MO 65566
Email To:	asanders@doerun.com
Phone: 573-689-4535	Fax: 573-244-8179
Requested Due Date/TAT:	5 - 7 Days

Section B Required Project Information:

Report To:	Amy Sanders
Copy To:	
Purchase Order No.:	
Project Name:	NPDES Monthly (Rivermines)
Project Number:	

Section C Invoice Information:

Attention:	Amy Sanders
Company Name:	The Doe Run Company
Address:	PO Box 500, Viburnum, MO 65566
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☑ OTHER _____

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	TSS	Settleable Solids	Sulfate	Cd, Pb, Zn - Total	Hardness	Cd, Pb, Zn - Dissolved	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Rivermines 001	WW	G			2/25/14	1534		3	2		1							x	X	x	x			N	18P14 18P34 18P3N 1.5
2	Rivermines Upstream	W	G			2/25/14	1434		2	1		1							x		x	x	x	x	N	
3	Rivermines Downstream	W	G			2/25/14	1507		2	1		1							x		x	x	x	x	N	
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

Requested Analysis Filtered (Y/N)

601637S3

Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* 200.8 Total Recoeverable Metals	Larry Hopkins DoeRun	2/25/14	1600	Brent Class / PASI-KS	2/27/14	0820	3.6	Y	Y	Y
**analyzed within 24 hours with flagged data										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Larry Hopkins	DATE Signed (MM/DD/YY): 2/25/14				
SIGNATURE of SAMPLER:	Larry Hopkins					

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007